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ABSTRACT

Reported is a study of classificational preference of 250 school children ranging in age from 3 to 8 years old. These subjects showed typical diversity in academic experiences and intellectual aptitudes. The research procedure involved presenting a subject with a set of colored paper shapes and asking him to sort the objects into subsets. The review of literature indicated that the 4-to 7-year-old child would tend to sort by color and that older children would tend to sort by shape or form. The data consisted of a count of the number of subjects who sorted by form and those who sorted by color. Comparisons were made between the age and sex of a youngster and his history of preference. The analysis of the data led to the following conclusions: (1) youngsters in all age groups tested (including preschool) had a strong tendency to sort colored papers by form rather than color; (2) this preference was evident for both sexes; and (3) even in those sets biased against shape as a criterion for grouping, form was still chosen over color in a ratio of 2:1. It was suggested that this preference for form over color as a criterion for classification develops before formal schooling. Suggestions supporting this include influence of television programs. (Author/EB)

CLASSIFICATIONAL PREFERENCE IN YOUNG CHILDREN

FORM OR COLOR?

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The tendency of even young children to group or classify things in their environment is a common observation. The criteria characteristics that are used in making the sortings vary from situation to situation and child to child. Nevertheless, in particular situations, certain of these qualities or factors seem to be used in preference to others. This paper will report the results of an investigation designed to test this preference when the choice factors are color or form.

A review of the literature finds that a number os studies[1,2,3] have been conducted in which children have been presented with stimulus materials to which they may respond on the basis of more than one dimension, the child's predominant choice being designated as his form or color "preference". The results of these studies suggest that within the age range of 4-7 years, children tend to shift in preference, color choices predominantly occurring in those of younger ages and form choices in those of older ages. That is, when younger children are given the choice of sorting things on the basis of color or shape they will more often choose color as the preferred sorting dimension. Whereas, older children will tend to sort by shape or form.

Several explanations of this shift have been given. A current explanation offered by Charles MacSpellman[4] posits that the shift is an adoptive response by the young child to classroom stimuli, which stresses attention to form. That is, in the classroom a child finds that many tasks require him to pay more attention to form characteristics than to color. Thus, he may adapt to the classroom situation by adopting a perceptual style which allows more fruitful interaction with academic demands. For example, when a child is learning the letters of the alphabet he must attend to the form of the letters -- the same is true for numeral writing. These tasks confine his attention to form rather than color. The color of the crayon used to make the letter K, for example, is irrelevant for its

recognition. The child in effect is learning an adoptive rule about his environment. Color is less important than form for most of the instructional tasks or skills the 5- or 6- year-old child is required to master.

The primary purposes of the study reported here were to:

(1) Determine if this preference is already present in a group of youngsters prior to entering school, and

(2) Reveal the firmness with which this preference is maintained.

This study included over 250 children ranging in age from three to eight years. Sixty-seven of the 3-, 4-, and 5- year-olds were pre-school. The children showed typical diversity in academic experiences and intellectual aptitudes. The research procedure involved presenting a subject with a set of colored paper shapes and asking him to sort the objects into subsets. Four different sets of colored, paper cut-out shapes were used. Sets A and B consisted of 4 or 9 members, respectively. The design of these sets was to create no stimuli-bias for either color or shape. That is, as it related to the cut-outs the stimuli for color and shape categorization were equal. Sets C and D consisted of 9 members and were designed to create a stimuli-bias for color categorization. Thus, these sets were formed in such a way that should discourage a preference to sort by shape. This can be made clearer by studying the specific arrangements employed (see Tables 1-4). Following the sorting, the investigator noted the apparent criterion (color or form) that was used as a basis for making the sort. In those instances where the preference was not apparent, the youngster was asked the reason for his grouping arrangement.

The data consisted of a count of the number of subjects who sorted by form and those who sorted by color. Comparisons were made between the age and sex of a youngster and his sorting preference. Also, comparisons were made among subject sorting preference on the four different (biased and unbiased) sets. These results

are presented in Tables 1-4.

An analysis of the data led to the following conclusions:

(1) Youngsters in all age groups tested (including pre-school) had a strong tendency to sort colored paper shapes by form rather than by color,

(2) This preference for sorting by shape was evident for both boys and girls, and

(3) Even in those sets that were biased against shape as a criterion for grouping, form was still chosen over color by about two to one.

The findings of this study are dramatic in that they show the strong preference that children have for form over color as a criterion for classifying plane, colored figures. It is also suggested that this preference develops before formal schooling. Perhaps, the influence of television programs, such as Sesame Street that must necessarily stress form (since many people do not have color TV sets) have contributed to this early preference. More research is needed to elicit clearer interpretations. Although the sorting preference described in this paper may not exist for all categorization tasks it nevertheless has important implications in the development of the classification concept.

REFERENCES

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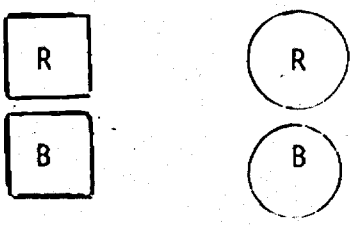
2. Brian, C., and F. Gordenough. Relative potency of color and form perception at various ages. J. Exp. Psychol., 1929, 12, 197-213.

3. Suchman, R. and T. Trabasso. Color and form preference in young children. J. Exp. Child Psychol., 1966, 3, 177-187.

4. MacSpellman, C. The shift from color to form preference in young children of different ethnic backgrounds. Part of a final report to The Office of Economic Opportunity, 1968.

TABLE 1: Sorting Preference of Students on Set A.

SET A

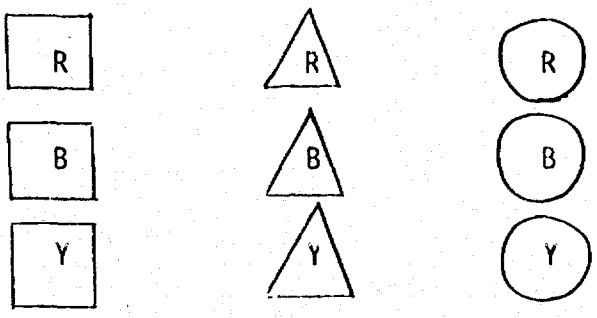


R=Red
B=Blue

		Preference		
		Shape	Color	Total
		(Numbers of Ss)		
Female				
Age ↑	3	3	2	5
	4	13	5	18
preschool	5	9	2	11
	5-6	6	2	8
	6-7	12	3	15
	7-8	11	3	14
		54	17	71
Male				
Age ↑	3	1	1	2
	4	11	4	15
preschool	5	11	5	16
	5-6	4	1	5
	6-7	9	0	9
	7-8	12	2	14
		48	13	61
		102	30	132
		(77%)	(23%)	

TABLE 2: Sorting Preference of Students on Set B.

SET B

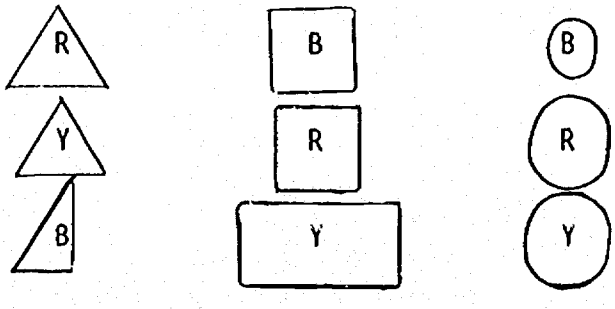


Y=Yellow
R=Red
B=Blue

		Preference		
		Shape	Color	Total
		(Numbers of Ss)		
Female Age	5-6	7	1	8
	6-7	6	2	8
	7-8	17	1	18
		30	4	34
Male Age	5-6	3	1	4
	6-7	16	0	16
	7-8	11	1	12
		30	2	32
		60	6	66
		(91%)	(9%)	

TABLE 3: Sorting Preference of Students on Set C.

SET C

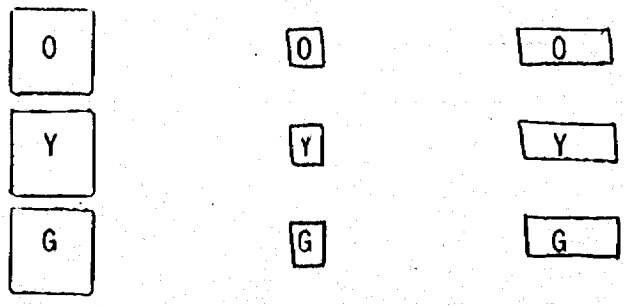


R=Red
B=Blue
Y=Yellow

		Preference (Numbers of Ss)		
		Shape	Color	Total
Female				
Age	5-6	7	3	10
	6-7	11	1	12
	7-8	4	2	6
		22	6	28
Male				
Age	5-6	11	1	12
	6-7	12	0	12
	7-8	7	0	7
		30	1	31
		52	7	59
		(88%)	(12%)	

TABLE 4: Sorting Preference of Students on Set D.

SET D



		Preference		
		Shape	Color	Total
		(Numbers of Ss)		
Female Age	5-6	9	4	13
	6-7	7	4	11
	7-8	3	2	5
		19	10	29
Male Age	5-6	5	6	11
	6-7	9	2	11
	7-8	6	1	7
		20	9	29
		39	19	58
		(67%)	(33%)	